AMENDMENTS TO THE CLAIMS

Listing of Claims:

1. (Currently Amended) A process for the production of coated silicon/carbon particles comprising:

a) providing a carbon residue forming material;

b) providing silicon particles;

c) coating said silicon particles with said carbon residue forming material to form coated silicon particles;

d) providing particles of a carbonaceous material;

e) coating said particles of carbonaceous material with said carbon residue forming material to form coated carbonaceous particles;

f) embedding said coated silicon particles onto said coated carbonaceous particles to form silicon/carbon composite particles;

g) coating said silicon/carbon composite particles with a carbon residue forming material to form coated silicon/carbon composite particles ~~wherein the properties of said coating are controlled by adjusting the concentrations of the carbon residue forming material and solvent~~; and

h) stabilizing the coated composite particles by subjecting said coated composite particles to an oxidation reaction;

wherein steps c) and e) are carried out separately.

2. (Original) The process of claim 1, wherein said carbon residue forming material is provided in a solution comprising one or more solvents and said carbon residue forming material.

3. (Original) The process of claim 2, wherein the silicon particles are supplied as a suspension in a solution comprising one or more solvents before mixing with said solution of carbon residue forming material.

4. (Original) The process of claim 2, wherein particles of a carbonaceous material are supplied as a suspension in a solution comprising one or more solvents before mixing with solution of carbon residue forming material.

5. (Original) The process of claim 2, wherein the silicon/carbon composite particles are supplied as a suspension in a solution comprising one or more solvents before mixing with said solution of carbon residue forming material.

6. (Original) The process of claim 2, further comprising adding one or more solvents to the mixture of the solution of carbon residue forming material and the particles.

7. (Original) The process of claim 1, further comprising stabilizing the silicon particles after coating.

8. (Original) The process of claim 1, further comprising stabilizing the carbonaceous particles after coating.

9. (Original) The process of claim 7, further comprising carbonizing the silicon particles.

10. (Original) The process of claim 8, further comprising carbonizing the carbonaceous particles.

11. (Original) The process of claim 9, wherein the particles are carbonized in an inert atmosphere at a temperature of between about 400°C to about 1500°C.

12. (Previously Presented) The process of claim 10, wherein coated particles are carbonized in an inert atmosphere as particles are added to a solution comprising one or more solvents and carbon residue forming material to embed the coated silicon particles onto the coated carbonaceous particles at a temperature of between about 400°C to about 1500°C.

13. (Original) The process of claim 2, wherein the solvent is selected from the group consisting of toluene, benzene, xylene, quinoline, tetrahydrofuran, tetrahydronaphthalene, naphthalene, methanol, acetone, methyl-pyrrolidinone, cyclohexane, ether and water.

14. (Original) The process of claim 2, wherein the solution of carbon residue forming material is mixed at an elevated temperature to dissolve the carbon residue forming material in one or more solvents.

15. (Original) The process of claim 2, wherein the suspension of particles is mixed at an elevated temperature.

16. (Original) The process of claim 2, wherein the ratio of the one or more solvents to the carbon residue forming material in the mixture of the carbon residue forming material solution and the particle suspension is 2:1 or more.

17. (Original) The process of claim 2, wherein the ratio of the one or more solvents to the carbon residue forming material in the mixture of the carbon residue forming material solution and the particle suspension is 4:1 or more.

18. (Previously Presented) The process of claim 1, wherein the coated silicon particles and the coated carbonaceous particles are added to a solution of carbon residue forming material to embed the coated silicon particles onto the carbonaceous particles.

19. (Previously Presented) The process of claim 1, wherein at least a portion of the coating of carbon residue forming material is precipitated under ambient or higher pressure.

20. (Previously Presented) The process of claim 19, wherein at least a portion of the coating of carbon residue forming material is precipitated at a temperature of about -5°C to about 400°C.

21. (Original) The process of claim 1, wherein the coating of carbon residue forming material is uniform and substantially smooth.

22. (Original) The process of claim 1, wherein the stabilized coated silicon/carbon composite particle is further coated with carbon residue forming material to form an additional coating layer of carbon residue forming material.

23. (Original) The process of claim 22, wherein the multiple coated silicon/carbon composite particle is still further coated with carbon residue forming material to form additional coating layers of carbon residue forming material.

24. (Original) The process of claim 22, wherein the final coating layer of the silicon/carbon composite particle is carbonized.

25. (Original) The process of claim 1, wherein the carbonaceous particles comprise a pulverulent carbonaceous material selected from the group consisting of petroleum pitches, calcined petroleum cokes, uncalcined petroleum cokes, highly crystalline cokes, coal tar cokes, synthetic graphites, natural graphites, soft carbons derived from organic polymers, and soft carbons derived from natural polymers.

26. (Original) The process of claim 1, wherein the carbonaceous particles have an average particle size of up to about 50 μm.

27. (Original) The process of claim 1, wherein the carbonaceous particles have an average particle size of between about 1 μm to about 30 μm.

28. (Original) The process of claim 1, wherein the silicon particles have an average particle size of up to about 50 μm.

29. (Original) The process of claim 1, wherein the silicon particles have an average particle size of between about 0.03 μm and about 20 μm.

30. (Original) The process of claim 2, wherein the carbon residue forming material is deposited onto the surface of the particles by selectively precipitating the carbon residue forming material onto the particles.

31. (Original) The process of claim 1, wherein the carbon residue forming material is a polymeric material selected from the group consisting of heavy aromatic residues from petroleum and coal of chemical processes, lignin from pulp industry, phenolic resins, and carbohydrate materials.

32. (Original) The process of claim 1, wherein the carbon residue forming material is selected from the group consisting of petroleum pitches and coal tar pitches or pitches produced by chemical processes.

33. (Original) The process of claim 1, wherein the oxidation reaction is carried out in the presence of an oxidizing agent.

34. (Original) The process of claim 33, wherein the oxidation is carried out at elevated temperatures.

35. (Original) The process of claim 34, wherein the elevated temperature is supplied in a controlled manner with temperature ramps and hold periods.

36. (Original) The process of claim 33, wherein the oxidation is carried out under reduced pressure.

37-44. (Canceled)

45. (Currently Amended) A process for the production of coated silicon/carbon composite particles having substantially smooth coatings formed of an oxidized, carbon residue forming material comprising:

a) providing a first solution of a carbon residue forming material selected from the group consisting of petroleum pitches and coal tar pitches, wherein the first solution comprises one or more solvents selected from the group consisting of toluene, xylene, quinoline, tetrahydrofuran, tetrahydronaphthalene, and naphthalene;

b) providing particles of a carbonaceous material selected from the group consisting of calcined or un-calcined petroleum cokes, natural graphite and synthetic graphite, wherein the particles are provided in a second solution comprising one or more solvents;

c) mixing the first solution and the second solution at an elevated temperature;

d) depositing a coating of the carbon residue forming material onto the surface of the carbonaceous particles to form coated carbonaceous particles

e) providing particles of silicon, wherein the silicon particles are provided in a third solution comprising one or more solvents;

f) mixing additional first solution and the third solution at an elevated temperature;

g) depositing a coating of the carbon residue forming material onto the surface of the silicon particles to form coated silicon particles

h) mixing additional first solution with the coated silicon particles and the coated carbonaceous particles at an elevated temperature to form silicon/carbon composite particles;

i) depositing a coating of the carbon residue forming material onto the surface of the composite particles to form coated silicon/carbon composite particles wherein the properties of said coating are controlled by adjusting the concentrations of the carbon residue forming material and solvent;

j) stabilizing the coated composite particles by subjecting the particles to an oxidation reaction; and

k) carbonizing the coated composite particles;

wherein steps d) and g) are carried out separately.

46. (Original) The process of claim 45, wherein the coated particles are carbonized in an inert atmosphere at a temperature of greater than about 400°C.

47. (Original) The process of claim 45, wherein the coated particles are carbonized in an inert atmosphere at a temperature of between about 550 °C to about 1500 °C.

48. (Withdrawn) Coated silicon/carbon composite particles comprising a coating layer formed of an oxidized, carbon residue forming material produced by the process of claim 45.

49. (Withdrawn) An electrical storage cell comprising the coated particles of claim 46.

50. (Withdrawn) An electrical storage cell according to claim 49, wherein the electrical storage cell is a rechargeable electrical storage cell.

51. (Withdrawn) An anode of an electrical storage cell comprising the coated particles of claim 50.

52. (Withdrawn) An anode of an electrical storage cell according to claim 50, wherein the electrical storage cell is a rechargeable electrical storage cell.

53. (Withdrawn)A method for the manufacture of an electrical storage cell, wherein the method comprises incorporating into an anode of the electrical storage cell coated silicon/carbon composite materials comprising coated silicon particles and coated carbonaceous particles having a coating layer formed of an oxidized, carbon residue forming material.

54. (Original) The process of claim 2, wherein the coating of the particles is enhanced by effecting a partial precipitation of the carbon residue forming material onto the surface of the particles.

55. (Original) The process of claim 54, wherein the partial precipitation is effected by dilution of a concentrated solution of a carbon residue forming material by adding more of the same or one or more different solvents.

56. (Original) The process of claim 55, wherein the ratio of solvent to carbon residue forming material in the concentrated solution is 2:1 or less and the ratio of solvent to carbon residue forming material in the diluted solution is greater than 2:1.

57. (Original) The process of claim 55, wherein the ratio of solvent to carbon residue forming material in the concentrated solution is 2:1 or less and the ratio of solvent to carbon residue forming material in the diluted solution is greater than 5:1

58. (Original) The process of claim 55, wherein partial precipitation of the carbon residue forming material is effected by cooling the mixture of the silicon and carbonaceous particles and carbon residue forming material during the coating step.

59. (Original) The process of claim 2, wherein the coating of carbon residue forming material is deposited under ambient or higher pressure.

60. (Withdrawn) The coated carbonaceous material of claim 46 which, when used as an anode material in a lithium ion battery, shows a first cycle charge efficiency greater than 90% at a cut-off potential of 0.5 volts versus lithium metal.

61. (Currently Amended) A process for the production of coated silicon/carbon composite particles having substantially smooth coatings formed of an oxidized, carbon residue forming material comprising:

a) providing a first solution of a carbon residue forming material selected from the group consisting of petroleum pitches and coal tar pitches, wherein the first solution comprises one or more solvents selected from the group consisting of toluene, xylene, quinoline, tetrahydrofuran, tetrahydronaphthalene, and naphthalene;

b) providing particles of a carbonaceous material selected from the group consisting of calcined or uncalcined petroleum cokes, natural graphite and synthetic graphite, wherein the particles are provided in a second solution comprising one or more solvents;

c) mixing the first solution and the second solution at an elevated temperature;

d) depositing a coating of the carbon residue forming material onto the surface of the carbonaceous particles to form coated carbonaceous particles ;

e) providing particles of silicon, wherein the silicon particles are provided in a third solution comprising one or more solvents;

f) mixing the first solution with the silicon particles and the coated carbonaceous particles at an elevated temperature to form silicon/carbon composite particles;

g) depositing a coating of the carbon residue forming material onto the surface of the composite particles to form coated silicon/carbon composite particles wherein the properties of said coating are controlled by adjusting the concentrations of the carbon residue forming material and solvent;

h) stabilizing the coated composite particles by subjecting the particles to an oxidation reaction; and

i) carbonizing the coated composite particles;

wherein steps d) and g) are carried out separately.

62. (Original) The process of claim 61, wherein the coated particles are carbonized in an inert atmosphere at a temperature of greater than about 400°C.

63. (Original) The process of claim 61, wherein the coated particles are carbonized in an inert atmosphere at a temperature of between about 550 °C to about 1500 °C.

64. (Withdrawn) Coated silicon/carbon composite particles comprising a coating layer formed of an oxidized, carbon residue forming material produced by the process of claim 61.